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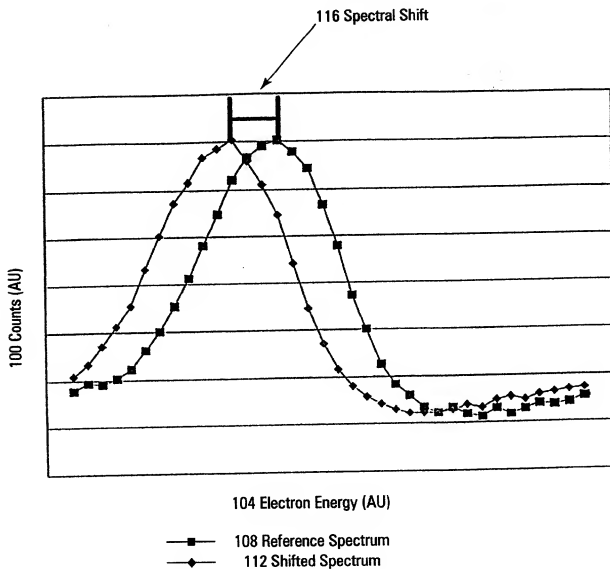


Fig. 1
(Prior Art)

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Spectra for Depth Profile of Charging SiO_2 on Si
 (Si KLL Auger Spectra)

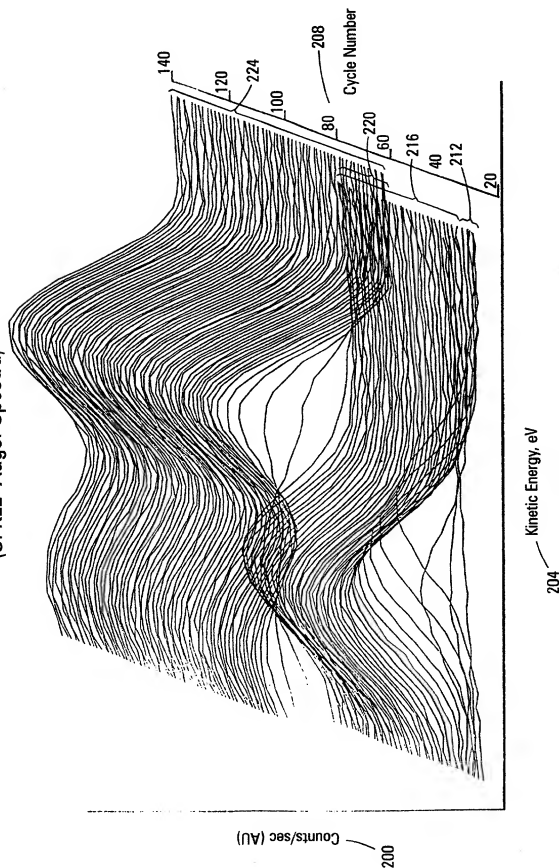


Fig. 2
 (Prior Art)

Parker et al.
 METHOD FOR REMOVING THE EFFECTS OF CHARGING FROM AUGER ELECTRON SPECTROSCOPY
 AND ESCA COMPOSITION DEPTH PROFILES
 SJO919990205US1 / 501.314US01

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Profiles of Scaled Target-Factor Weighting Factors from Factor Analysis
 of Uncompensated Auger Spectra from Charging SiO_2 on Si Substrate

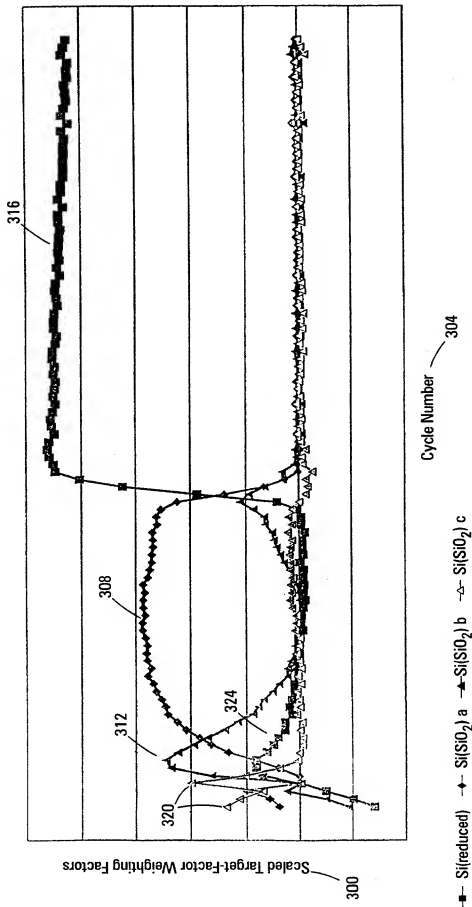
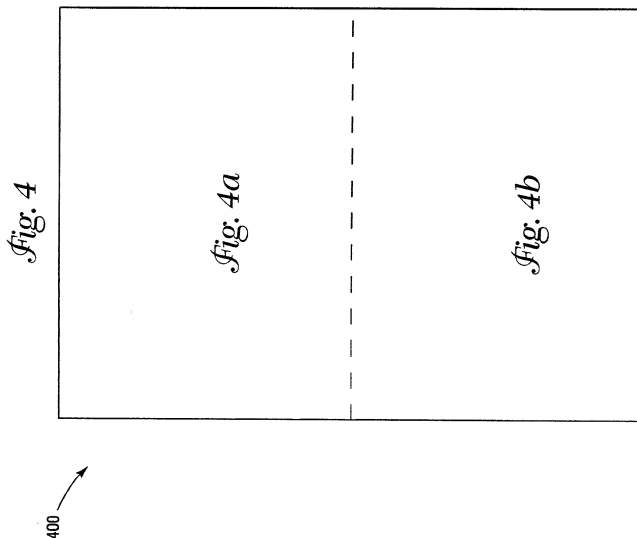
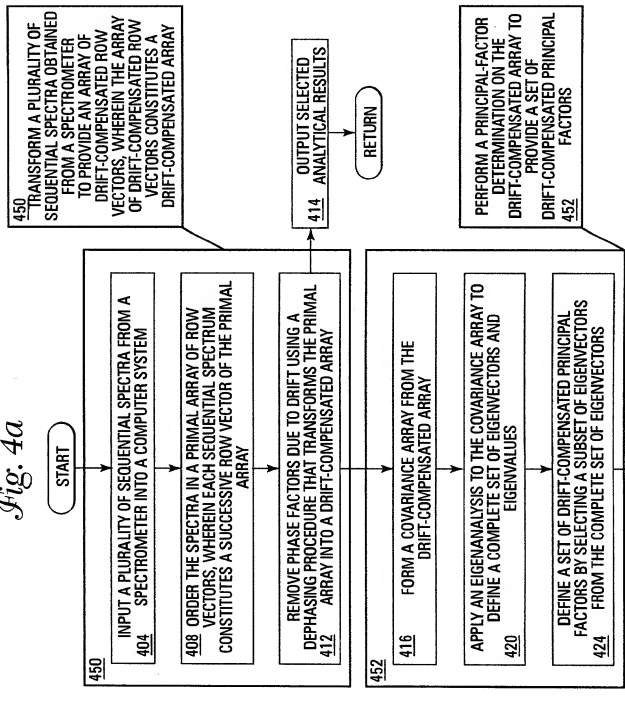


Fig. 3
 (Prior Art)



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Fig. 4a



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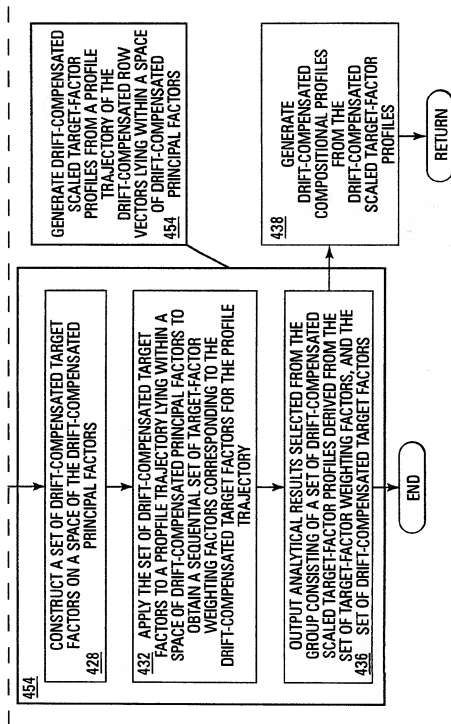
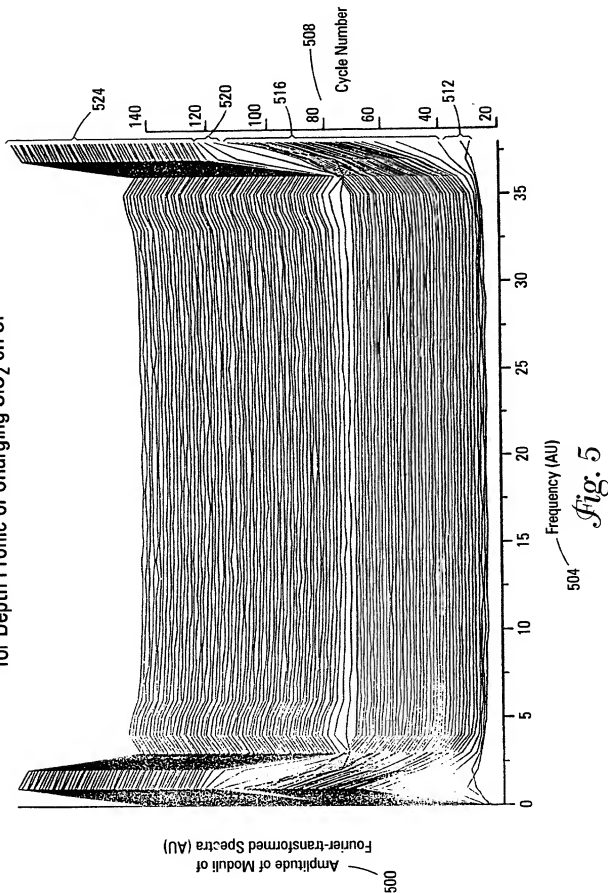


Fig. 4b

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Moduli of Fourier-transformed Spectra
 for Depth Profile of Charging SiO_2 on Si



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Profiles of Scaled Target-Factor Weighting Factors from Factor Analysis of Moduli of Fast-Fourier-Transformed Auger Spectra from Charging SiO_2 on Si Substrate

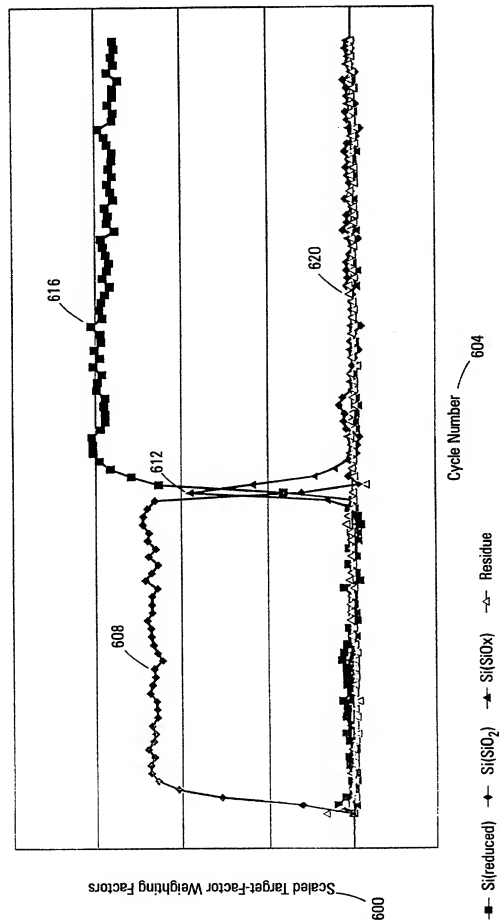


Fig. 6

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Drift-Compensated Spectra Synthesized
 from Selected Reference Spectra Fit to Primal Spectra
 for Depth Profile of Charging SiO_2 on Si

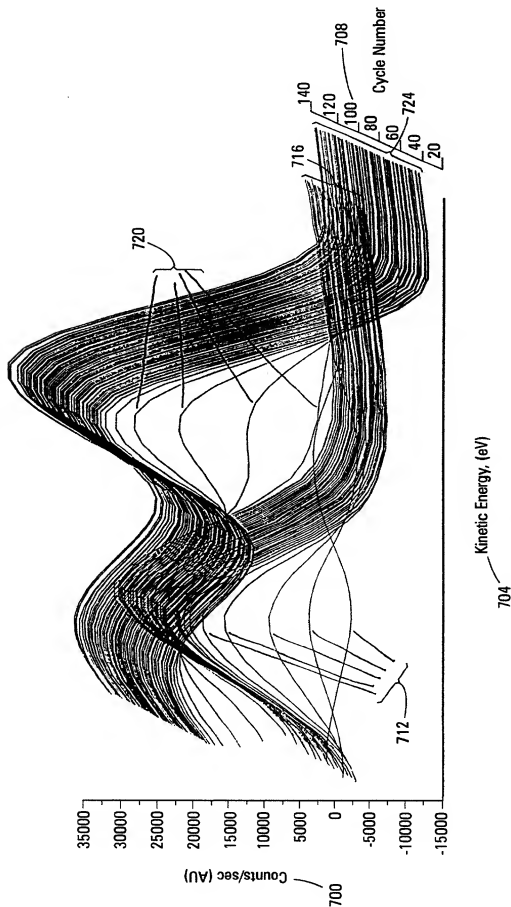


Fig. 7

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Profiles of Scaled Target-Factor Weighting Factors from Nonlinear-
Least-Squares Fitting of Selected Reference Spectra to Primal Spectra and
Profile of Principle Residue Weighting Factor from Eigenanalysis of Residues

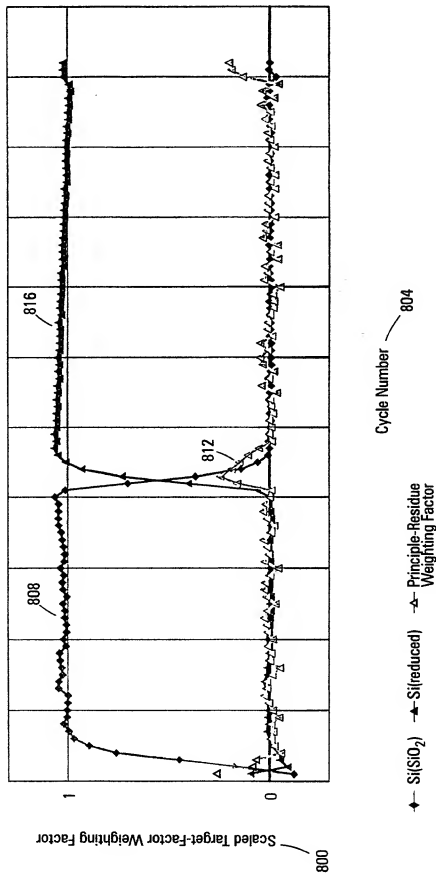


Fig. 8

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Profiles of Phase Factors for Selected Reference
 Spectra Obtained from Fitting to Primal Spectra

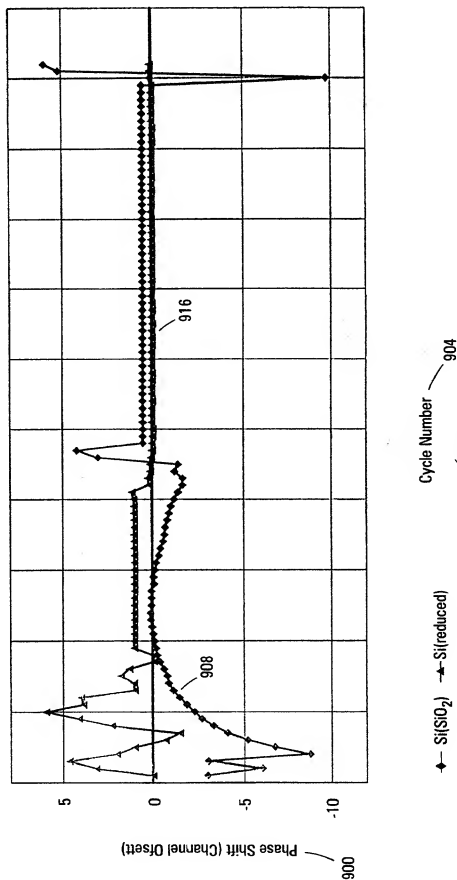


Fig. 9

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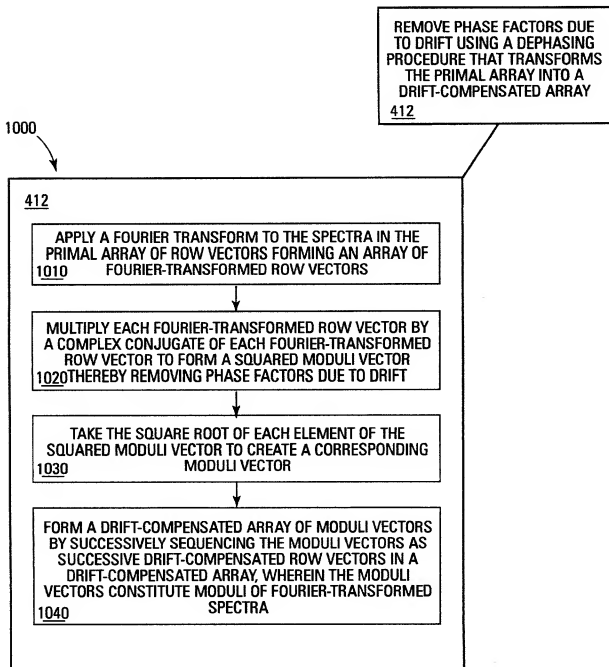


Fig. 10

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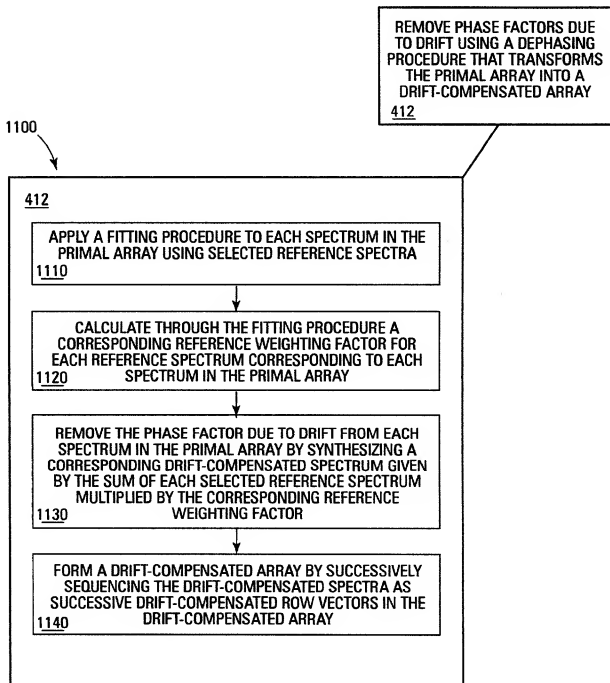


Fig. 11

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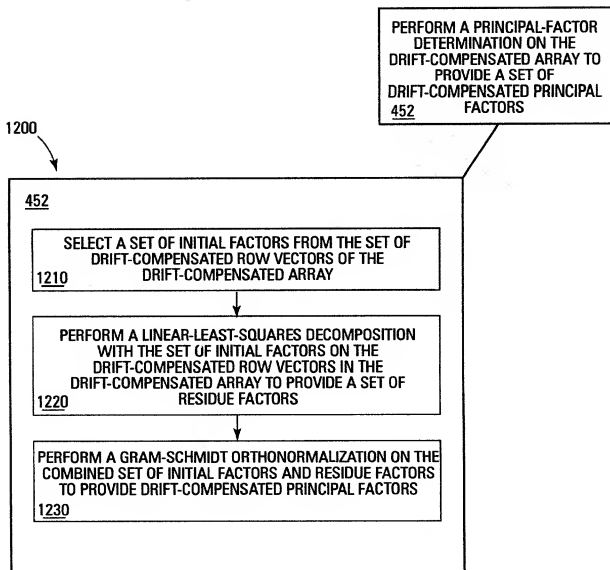


Fig. 12

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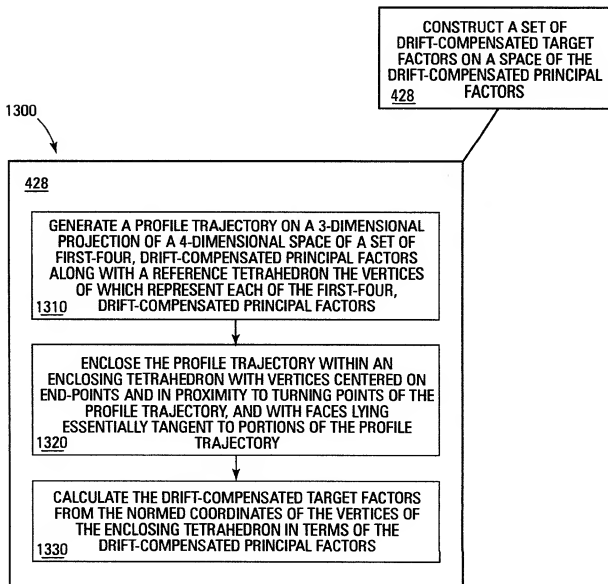


Fig. 13

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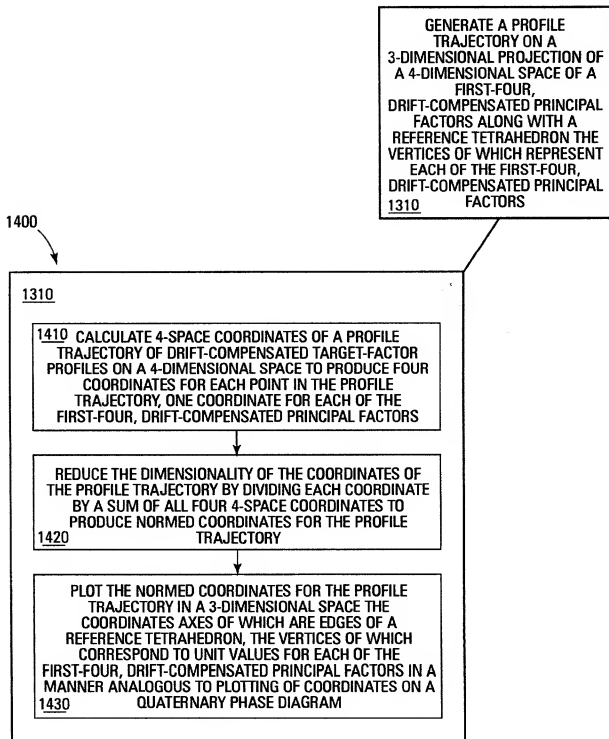


Fig. 14

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ENCLOSE THE PROFILE
TRAJECTORY WITHIN AN
ENCLOSING TETRAHEDRON WITH
VERTICES CENTERED ON
END-POINTS AND IN PROXIMITY
TO TURNING POINTS OF THE
PROFILE TRAJECTORY, AND WITH
FACES LYING ESSENTIALLY
TANGENT TO PORTIONS OF THE
PROFILE TRAJECTORY; AND,
CALCULATE THE
DRIFT-COMPENSATED TARGET
FACTORS FROM THE NORMED
COORDINATES OF THE VERTICES
OF THE ENCLOSING
TETRAHEDRON IN TERMS OF THE
DRIFT-COMPENSATED PRINCIPAL
FACTORS

1320 & 1330

1500

1320 & 1330

PLACE VERTICES OF AN ENCLOSING TETRAHEDRON AT
LOCI OF HEAVY POINT CONCENTRATIONS OF A PROFILE
TRAJECTORY
1510

ADJUST THE EDGES OF AN ENCLOSING TETRAHEDRON TO
LIE ALONG ESSENTIALLY STRAIGHT LINE
SEGMENTS
1520

PLACE REMAINING VERTICES OF AN ENCLOSING
TETRAHEDRON SO AS TO LIE NEAR THE TURNING POINTS OF
THE PROFILE TRAJECTORY
1530

ADJUST THE FACES OF THE ENCLOSING TETRAHEDRON TO
LIE ALONG CURVED SEGMENTS JOINING A TURNING POINT
AND ESSENTIALLY STRAIGHT LINE SEGMENTS OF THE
PROFILE TRAJECTORY
1540

Fig. 15

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1600

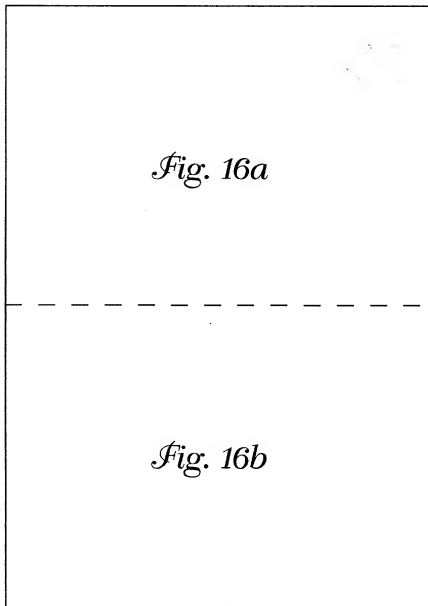
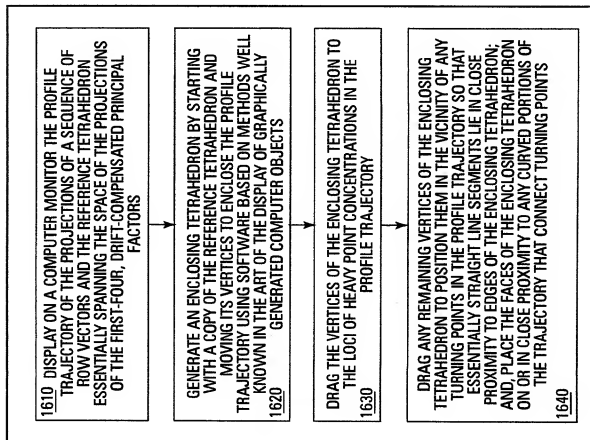


Fig. 16

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Fig. 16a



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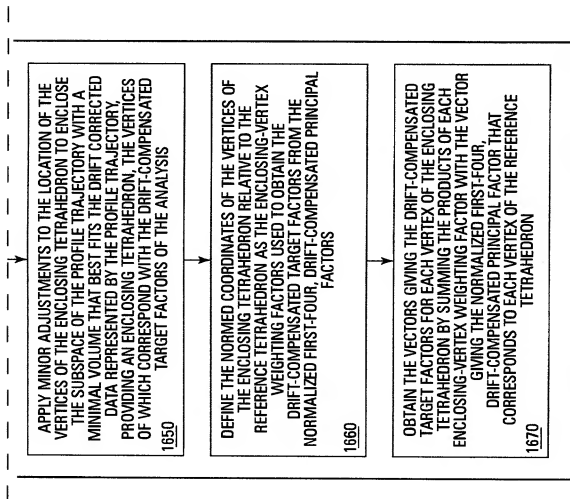
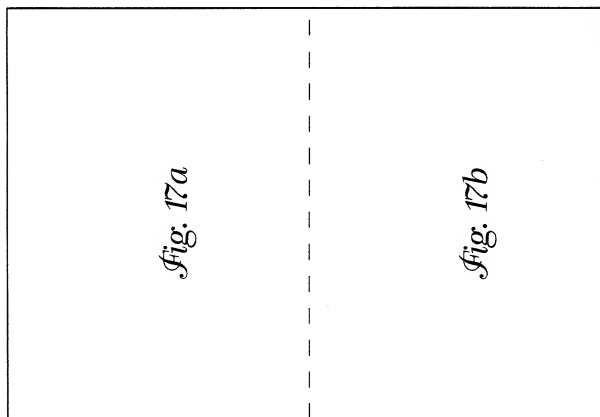


Fig. 16b

Fig. 17



1700

An arrow originates from the number '1700' and points horizontally to the left, terminating at the left edge of the diagram's frame.

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OUTPUT ANALYTICAL RESULTS
SELECTED FROM THE GROUP
CONSISTING OF A SET OF
DRIFT-COMPENSATED SCALED
TARGET-FACTOR PROFILES
DERIVED FROM THE SET OF
TARGET-FACTOR WEIGHTING
FACTORS, AND THE SET OF
DRIFT-COMPENSATED TARGET
FACTORS

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Fig. 17a

OBTAIN THE SET OF DRIFT-COMPENSATED TARGET-FACTOR
PROFILE VALUES BY APPLYING THE SET OF
DRIFT-COMPENSATED TARGET FACTORS TO THE PROFILE
TRAJECTORY BY ASCERTAINING THE NORMED
COORDINATES OF EACH POINT ON THE PROFILE
TRAJECTORY, I.E. THE TARGET-FACTOR WEIGHTING
FACTORS, FROM THE ENCLOSING TETRAHEDRON IN A
MANNER ANALOGOUS TO FINDING COORDINATES OF A
POINT ON A QUARTERNARY PHASE DIAGRAM

COMPOSE A REFERENCE VECTOR BY SUMMING THE
PRODUCTS FROMED BY MULTIPLYING THE VECTORS
CORRESPONDING TO THE DRIFT-COMPENSATED TARGET
FACTORS BY THE TARGET-FACTOR WEIGHTING FACTORS,
FOR EACH POINT ON THE PROFILE TRAJECTORY

SCALE THE AMPLITUDE OF THE RESULTING REFERENCE
VECTOR TO OPTIMALLY MATCH THE CORRESPONDING ROW
VECTOR COMPENSATED FOR THE EFFECTS OF DRIFT

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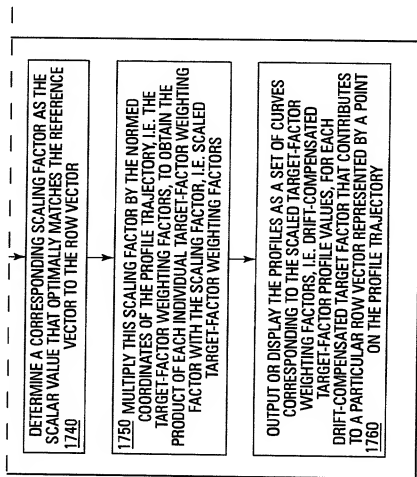


Fig. 17b

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1800

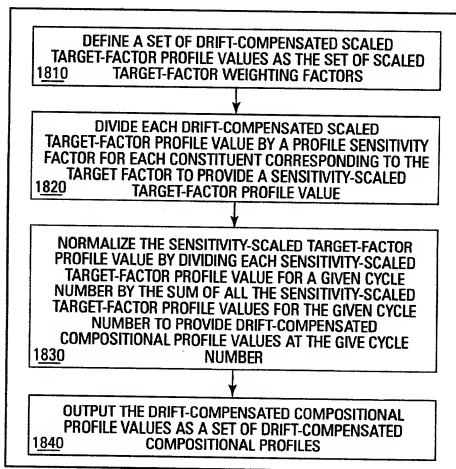


Fig. 18

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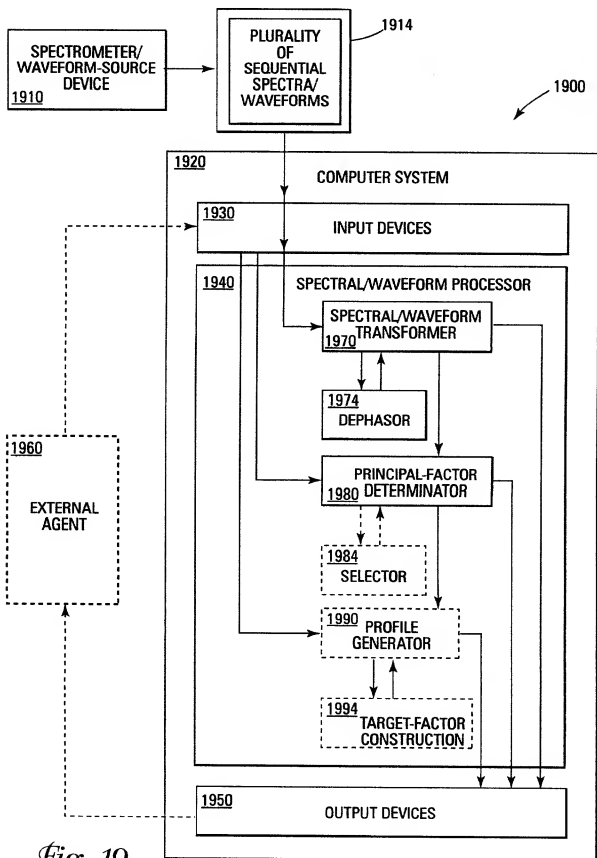


Fig. 19

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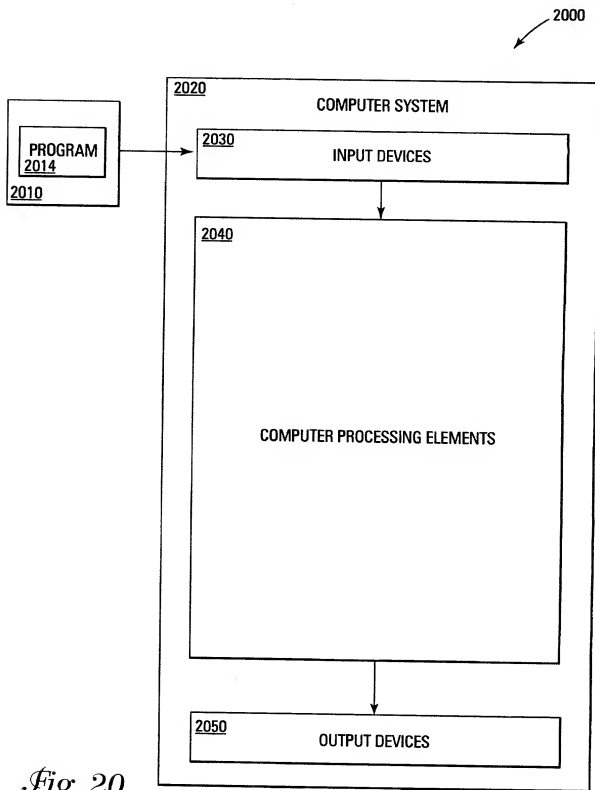


Fig. 20